



GRP160803-CTC3

Dual Wavelength SMD Type Emitter

Features

- Top view 0603 package
- Viewing Angle = $\pm 65^\circ$
- Compatible with infrared and vapor phase reflow solder process
- High reliability
- Dual dominant wavelength (G=522nm , R=621nm)
- RoHS compliance

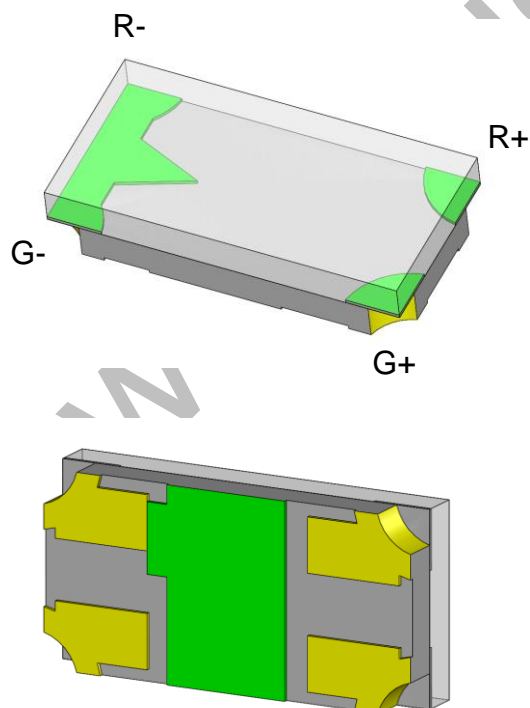
Applications

- Optical indicator.
- Switch and Symbol Display.

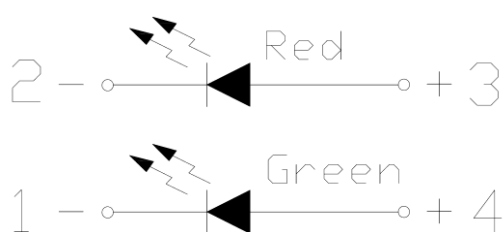
Description

The GRP160803-CTC3 is a double LED housed in a miniature SMD package. The device has a dominant wavelength of 522nm and 621nm LED.

Package Outline



Schematic



**Absolute Maximum Rating at 25°C**

Symbol	Parameters		Ratings	Units	Notes
I _F	Continuous Forward Current	G	25	mA	
		R	25		
I _{FP}	Peak Forward Current	G	100	mA	1
		R	60		
V _R	Reverse Voltage		5	V	
T _{opr}	Operating Temperature		-40 ~ +85	°C	
T _{stg}	Storage Temperature		-40 ~ +100	°C	
T _{sol}	Soldering Temperature		260	°C	2
P _D	Power Dissipation at(or below) 25°C Free Air Temperature	G	95	mW	
		R	60		

Electro-Optical Characteristics *TA = 25°C (unless otherwise specified)***Optical Characteristics (Green)**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _v	Luminous Intensity	I _F =5mA	90	-	225	mcd	3
λ _p	Peak Wavelength	I _F =5mA	-	516	-	nm	
λ _D	Dominant Wavelength	I _F =5mA	515	-	530	nm	4
θ _{1/2}	Angle of Half Intensity	I _F =5mA	-	±65	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =5mA	2.5	-	3.1	V	
I _R	Reverse Current	V _R =5V	-	-	1	μA	

**Optical Characteristics (Red)**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _v	Luminous Intensity	I _F =5mA	22.5	-	57.0	mcd	3
λ _p	Peak Wavelength	I _F =5mA	-	632	-	nm	
λ _D	Dominant Wavelength	I _F =5mA	-	621	-	nm	
θ _{1/2}	Angle of Half Intensity	I _F =5mA	-	±65	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =5mA	1.7	-	2.1	V	
I _R	Reverse Current	V _R =5V	-	-	1	μA	

Notes:

1. I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 10%.
2. Soldering time ≤ 10 seconds.
3. Bin Range of Luminous Intensity

Green				
Bin Code	Min	Max	Unit	Condition
QA	90	140	mcd	I _F =5mA
RA	140	225		
Red				
Bin Code	Min	Max	Unit	Condition
MA	22.5	36.0	mcd	I _F =5mA
NA	36.0	57.0		

Tolerance of: Luminous Intensity ±10%

4. Bin Range of Dominant Wavelength

Green				
Bin Code	Min	Max	Unit	Condition
A4	515	520	nm	I _F =5mA
A5	520	525		
A6	525	530		

Tolerance of Dominant Wavelength: ±1nm.

Tolerance of Forward Voltage ±0.1V.



Typical Characteristic Curves

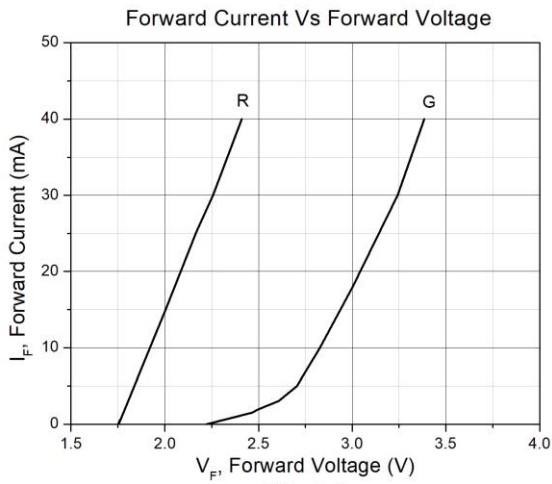


Figure 1

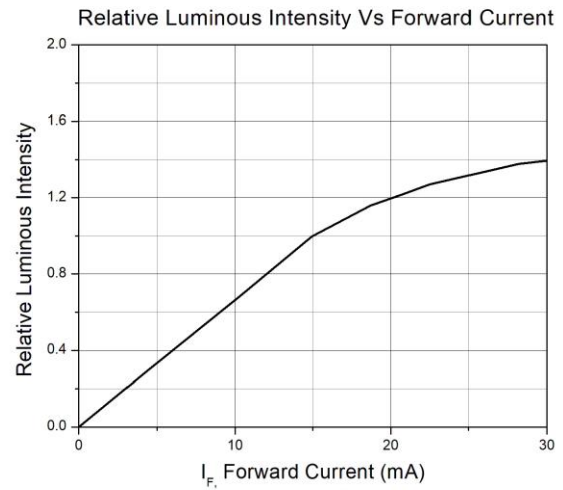


Figure 2

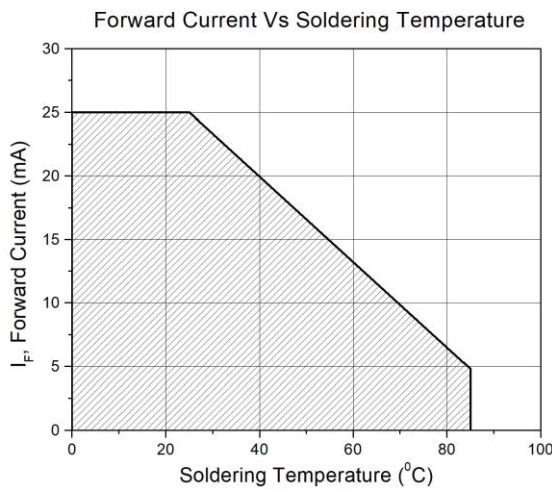


Figure 3

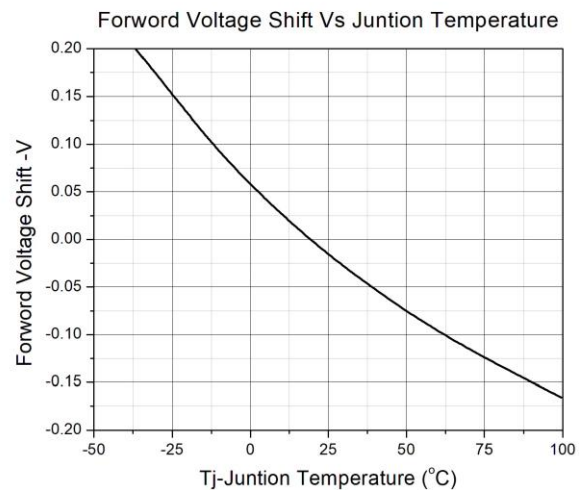


Figure 4

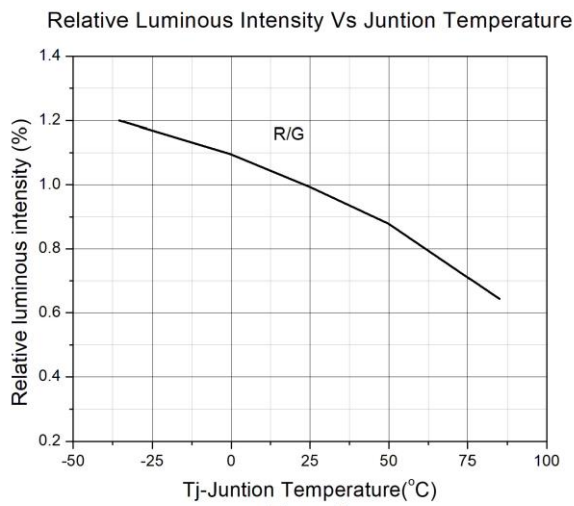


Figure 5

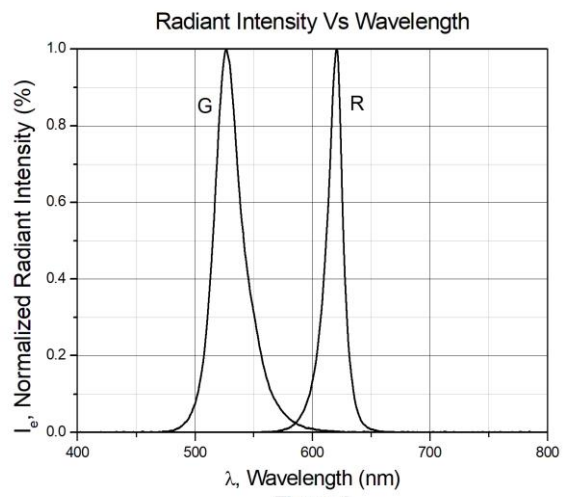


Figure 6



Typical Characteristic Curves

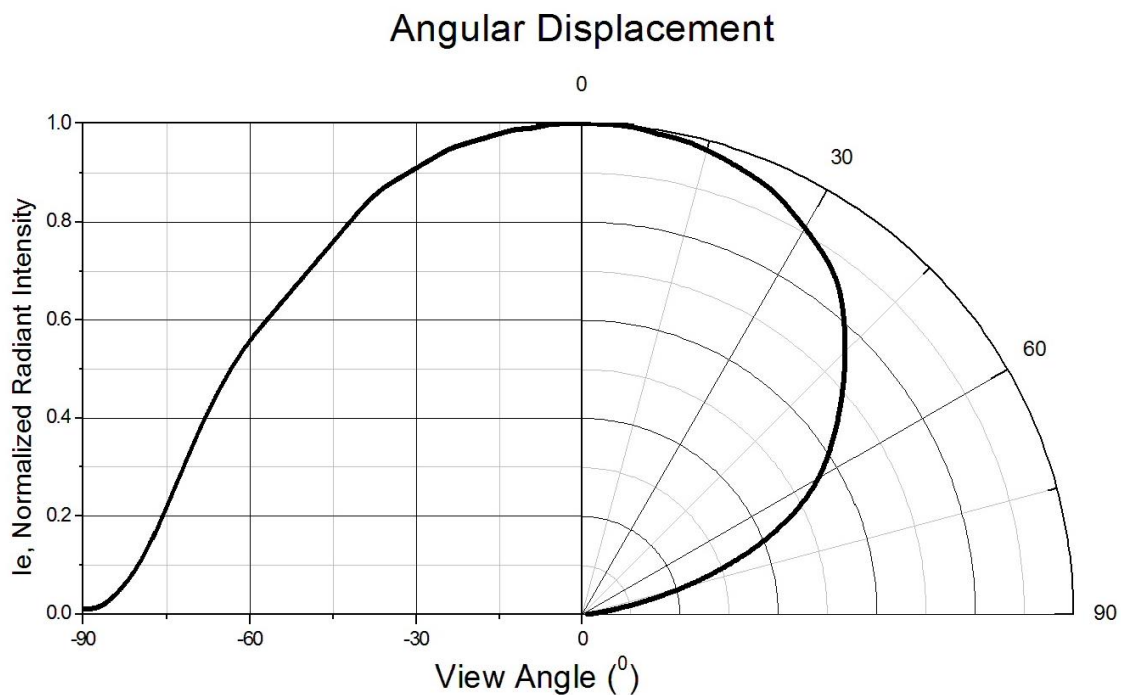
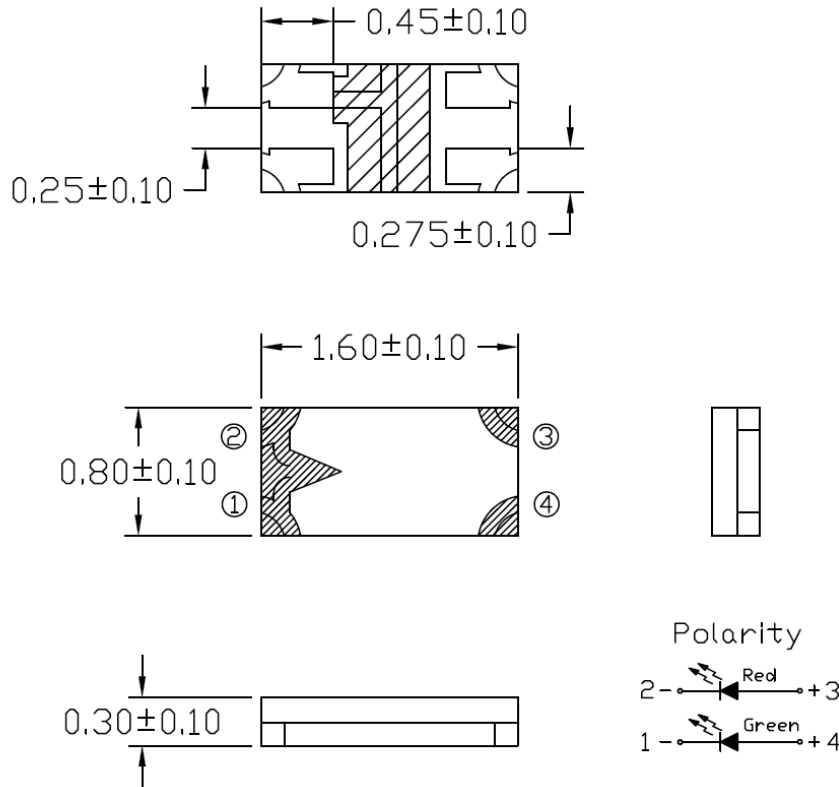


Figure 7

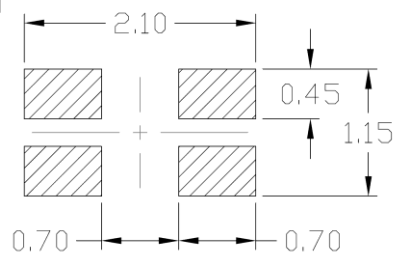


Package Dimension *All dimensions are in mm, unless otherwise stated*



Note: Tolerance unless mentioned is ± 0.1 mm.

Recommended Soldering Mask *All dimensions are in mm, unless otherwise stated*



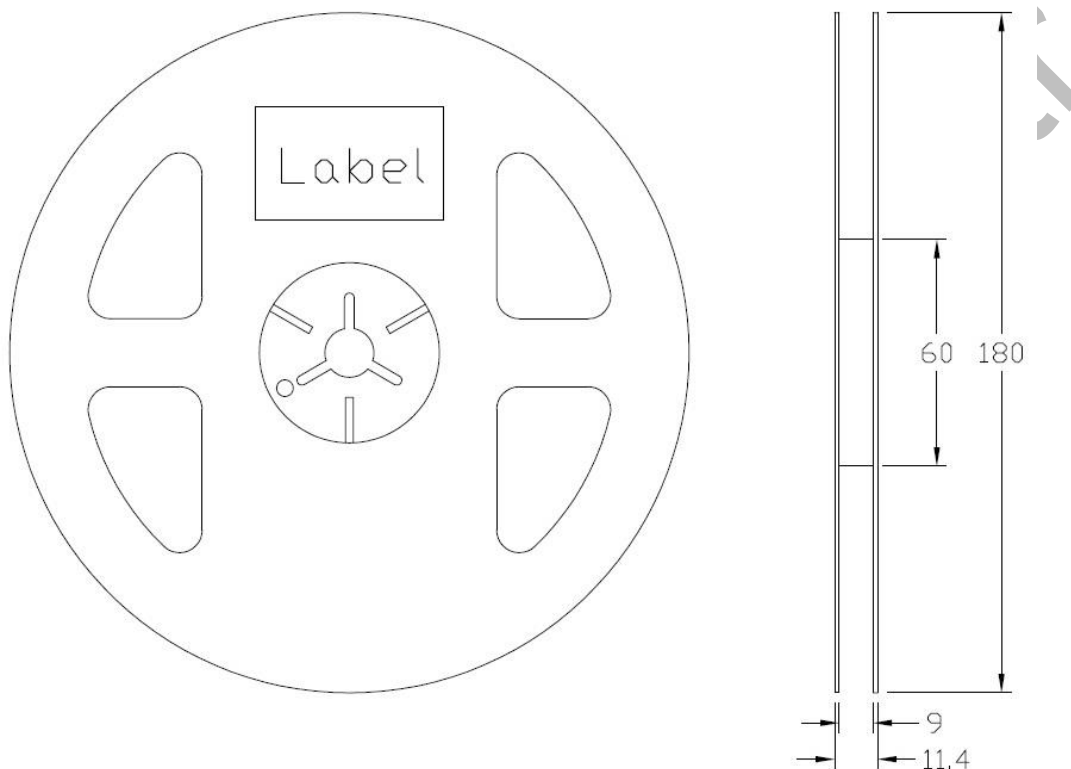
Note: Tolerance unless mentioned is ± 0.1 mm.

Ordering Information

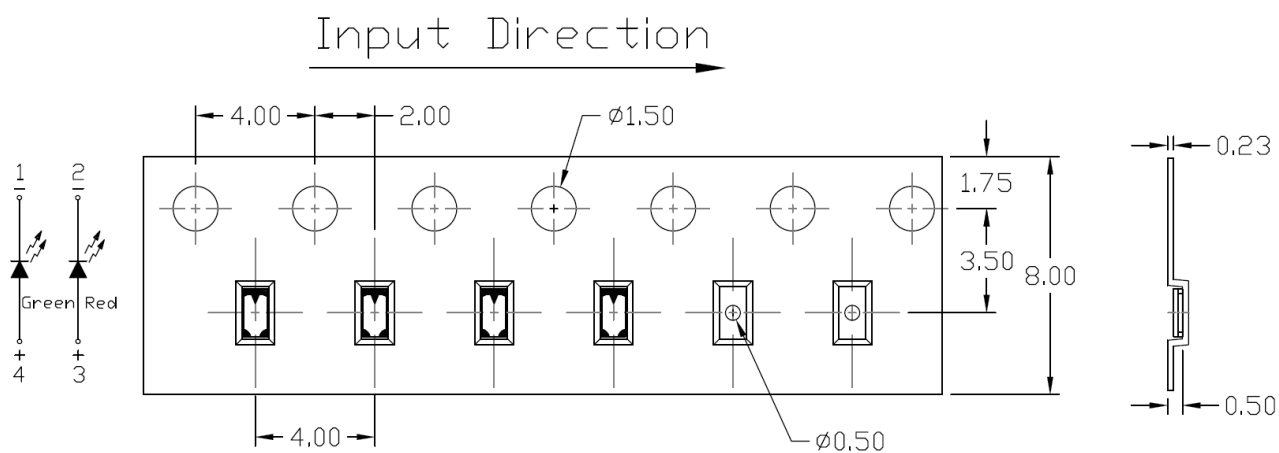
Part Number	Description	Quantity
GRP160803-CTC3	Tape & Reel	3000 pcs



Reel Dimension *All dimensions are in mm, unless otherwise stated*



Tape Dimension *All dimensions are in mm, unless otherwise stated*



Note: Tolerance unless mentioned is ± 0.1 mm.



Label Form Specification



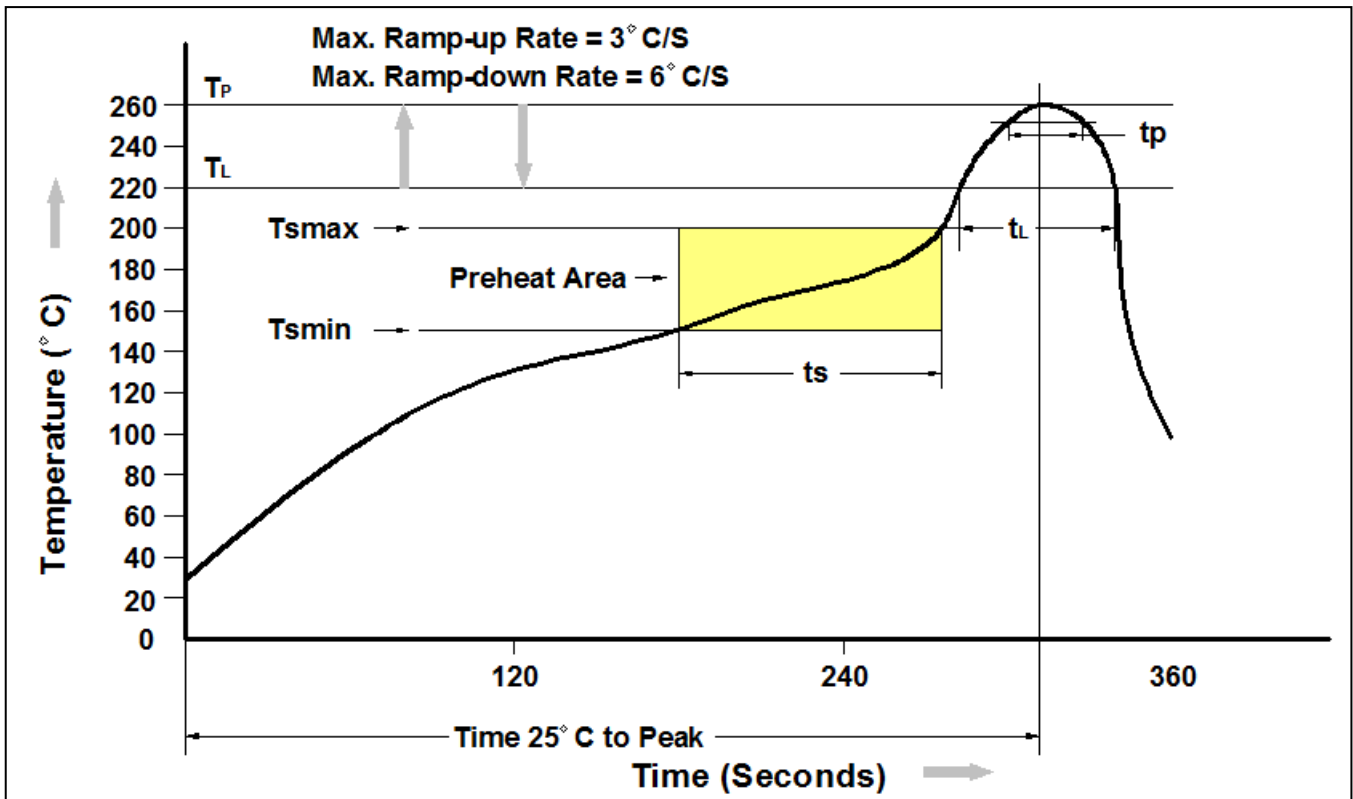
CPN : Customer Part Number
 Part no: CTM Production Number
 Serial no: Production Number
 Lot no: Lot number
 Q'ty: Packing Quantity
 Date Code: Manufacture Date
 IV : Bin Code of Luminous Intensity
 WD : Bin Code of Dominant Wavelength
 VF : Bin Code of Forward Voltage
 MADE IN CHINA: Production Place

Storage Condition

1. Do not open moisture proof bag before the products are ready to use.
2. The moisture barrier bag should be stored at 30°C and 90%R.H. max. before opening.
Shelf life of non-opened bag is 12 months after the bag sealing date.
3. After opening the moisture barrier bag floor life is 1 year at 30°C/60%RH. max. Unused LEDs should be resealed into moisture barrier bag. (Refer to J-STD-020 Standard)
4. If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the J-STD-033 Standard conditions.



Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmín)	150°C
Temperature Max. (Tsmáx)	200°C
Time (ts) from (Tsmín to Tsmáx)	60-120 seconds
Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of 260°C	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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